



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,003	09/21/2000	Woong Sik Choi	2658-191P	8781

2292 7590 08/08/2006

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

NGUYEN, JENNIFER T

ART UNIT PAPER NUMBER

2629

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/667,003

Applicant(s)

CHOI ET AL.

Examiner

Jennifer T. Nguyen

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24, 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This Office action is responsive to amendment filed on 05/15/06.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter AAPA) figs. 2 and 3 in view of Troxell (U.S. Patent No. 5,177,406).

Regarding claims 1 and 20, AAPA figs. 2 and 3 discloses an electro-luminescence display device, comprising:

a first electro-luminescence diode for a first pixel cell (R) for displaying a first color, the first electro-luminescence diode having a first electrical characteristic;

a second electro-luminescence diode for a second pixel cell (G) displaying a second color, the second electro-luminescence diode having a second electrical characteristic;

a first driving circuit (T2 driving pixel R) which receives a first driving voltage (L1) and applies a first driving current to the first electro-luminescence diode; and

a second driving circuit (T2 driving pixel G) which receives a second driving voltage (L2) equal to the first driving voltage and applies a second driving current different from the first driving circuit to the second electro-luminescence diode (supported specification page 2, line 16 to page 3 line 17).

AAPA figs. 2 and 3 differs from claims 1 and 20 in that it does not specifically disclose a difference between the first driving current and the second driving current being set based on a difference between the first electrical characteristic of the first electro-luminescence diode and the second electrical characteristic of the second electro-luminescence.

Troxell teaches by varying the width of the channel of the first and second of the driving circuits, the on-current which flows through the pixels can be varied; resulting a difference between the first driving current and the second driving current being (col. 10, lines 24-58, Fig. 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the second driving current different from the first driving current as taught by Troxell in the system of AAPA figs. 2 and 3 in order to provide the driving circuit have a geometry which can be tailored to optimally match the on-current flow from the pixel with the performance of that particular pixel.

Regarding claims 2, 3, 11, the combination of AAPA figs. 2 and 3 and Troxell teaches the first driving circuit and the second driving circuit has a different structure (col. 11, lines 11-45 of Troxell).

Regarding claims 4-9, 17, 19, 21-24, the combination of AAPA figs. 2 and 3 and Troxell teaches the first pixel cell is a R pixel cell and the second pixel cell is a B pixel cell, and the first ratio is greater than the second ratio (col. 11, lines 11-45 of Troxell).

Regarding claims 10, 18, 12-15, the combination of AAPA figs. 2 and 3 and Troxell further teaches a third driving circuit comprises a third transistor having a third channel width and a third channel length, the third channel width to the third channel length forming a third

Art Unit: 2629

ratio, the first second and third ratios being different, respectively (col. 11, lines 11-45 of Troxell).

Regarding claims 16 and 26 AAPA figs. 2 and 3 discloses an electro-luminescence display device, comprising:

- a first electro-luminescence diode for a first pixel cell, the first electro-luminescence diode having a first electrical characteristic;

- a first driving circuit (T2 driving pixel R) which drives the first electro-luminescence diode, the first driving circuit including a first transistor having a first channel width and a first channel length (not shown), the first channel width to the first channel length being a first ratio;

- a second electro-luminescence diode for a second pixel cell, the second electro-luminescence diode having a second electrical characteristic;

- a second driving circuit (T2 driving pixel G) which drives the second electro-luminescence diode, the second driving including a second transistor having a second channel width and a second channel length (not shown), the second channel width to the second channel length being a second ratio, (supported specification page 2, line 16 to page 3 line 17).

AAPA figs. 2 and 3 differs from claim 16 and 26 in that it does not specifically disclose the first ratio being different from the second ratio.

Troxell teaches a first ratio being different from a second ratio by varying the width of the channel of the first and second of the driving circuits ( $R = \text{Beta} \times L/W$ ), the on-current which flows through the pixels can be varied (col. 10, lines 24-58, Fig. 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the first ratio being different from the second ratio as taught by Troxell in the system of AAPA

figs. 2 and 3 in order to provide the driving circuit have a geometry which can be tailored to optimally match the on-current flow from the pixel with the performance of that particular pixel.

***Response to Arguments***

4. Applicants' arguments filed 5/15/2006, have been fully considered but they are not persuasive because as follows:

In response to Applicants' argument stated "Troxell nowhere teaches that the difference of the currents or the channel width-to-length ratios between two driving transistors is set based on the electrical characteristic of the EL diodes". Examiner respectfully disagrees because it was known that a driving circuit driving a driving current to a pixel cell based on an electrical characteristics of an electro-luminescence diodes of the pixel cell of the electro-luminescence device. In other words, each of a electro-luminescence diodes of the pixel cell of the electro-luminescence device has a different electrical characteristics according to the applied current, when a current with the same magnitude flows in each pixel cell, different color pixel cell has a brightness magnitude different from one to another (AAPA fig. 3, page 3, lines 10-17). Troxell teaches changing a current based on changing of a channel width of a driving circuit, resulting the current flows to each pixel is different from one to another varied, by adjusting the ratio (L/W) each type of pixel cell, allowing an appropriate current to flow through the pixel cell and achieve the requisite brightness level of illumination thereof (col. 10, lines 24-58, Fig. 5). It is about how to made a different of the currents flow to the driving transistors by to manufacture different size of the driving transistors and the driving transistor can drive different kinds of pixel or display element. Therefore, it is proper to incorporate the changing the current magnitude flow

Art Unit: 2629

to the pixel as taught by Troxell in the system of Conventional Art's display to improve the brightness of the display. It is believed that the ground of the rejection is maintained.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696.

The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen  
1/8/06

  
RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600